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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/861,989	05/22/1997	KELLY EUGENE DILLARD	60323	2874
7590	12/10/2003		EXAMINER	
JEANNE C. SUCHODOLSKI ALLIED SIGNAL INC. - LAW DEPARTMENT 101 COLUMBIA ROAD P.O. BOX 2245 MORRISTOWN, NJ 07962			CARLSON, JEFFREY D	
			ART UNIT	PAPER NUMBER
			3622	
			DATE MAILED: 12/10/2003	

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	08/861,989	DILLARD ET AL.
Examiner	Art Unit	
Jeffrey D. Carlson	3622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 08 September 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 25-30 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 25-30 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some *
 - c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 - a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

J.D.C.

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) Interview Summary (PTO-413) Paper No(s). _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

DETAILED ACTION

1. This action is responsive to the paper(s) filed 9/8/03.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 30 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claim 30, the phrase "a GPS unit a unique software key" is not understood.

Further, it is unclear if applicant is claiming a second unique software key in addition to the key claimed as included with the card in line 3. Are there two keys?

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Behr et al (US6107944) in view of Hornbuckle (WO 90/13865) and Ahrens et al (US5951620). Behr et al teaches a method for providing software updates to

mobile/remote GPS units. The remote GPS unit requests data (via user interface display/keyboard 24, 28, 30, 46, 60 - fig 1) from a base unit and the most recent maps/navigation data are transmitted to the remote unit. "The amount of information available at the remote unit can be increased by providing the remote unit with information from the base unit which is not adequately covered by any databases on-board the remote unit" [see abstract]. Behr et al recognizes the same limitations of prior art systems in which GPS/navigation units that require updates of more recent navigation/map data have to rely on distribution of floppy disk or CDs [col 2 lines 4-24]. The remote units request data from the base unit which responds with the requested data. Behr et al's methods include a database of maps located at the remote GPS unit [col 21 lines 33-36]; updates to the maps and programs can be communicated from the base unit to the remote unit to provide most recent versions [col 22 lines 9-12]. The communication protocol includes features for CRC error checking, compression, as well as unitID and subscriberID information for billing purposes [col 6 lines 40-46, col 11 lines 59-65, col 12 lines 57-62, col 14 lines 1-3, 10-14]. Regarding the "payment authorization information", as broadly interpreted this merely requires any type of information that is associated with authorization of payment. As such, requests for updated navigation information are taken to inherently include payment authorization information and/or permission for charging payments in that they at least identify a subscriber and are associated with billing functions. Behr et al does not teach encryption however. Hornbuckle teaches distribution of software code using encryption techniques so that the software can only be used by the intended recipient hardware [pg

21 lines 15-19]. The functionality of the software transmitted by Hornbuckle's methods is not the focus of the rejection, but rather the motivation for securing the transmitted software. It would have been obvious to one of ordinary skill at the time of the invention to have provided such encryption techniques with the GPS remote hardware devices of Behr et al so that the data transmissions over Behr et al's non-secure facilities (telephone system, RF, etc) were secured and that Behr et al's desire for sending software only to paying customers were accomplished without pirating/hacking by unauthorized, non-paying customers. Hornbuckle teaches encryption/decryption using an encryption key derived from and unique to the individual target deviceID in which the requested software is to be used [pg 20 lines 20-23]. Hornbuckle teaches downloading a decrypting module/program along with the encrypted requested software. The decrypting module decrypts the requested software and loads it into the internal memory of the targeted device [pg 19 lines 21-31]. The downloaded software package will only run on the particular target device having an encryption key corresponding to the encryption key employed by the host when the software was encrypted [pg 21 lines 15-19]. This encryption and decryption algorithm which uses the same key is an example of symmetric, or single-key encryption. Symmetric encryption requires both parties to possess the same key. Official Notice is taken that distribution of a needed key can be provided by either party. Hornbuckle appears to provide an example where the host sends the key to the client. It would have been obvious to one of ordinary skill at the time of the invention to have alternatively provided the host with a copy of the client key (unique to the user hardware) as part of the initial request, so that both parties

have copies of the same key, consistent with the symmetric encryption approach. It is a matter of system design choice to choose who transmits a copy of the key, so long as both parties use the same key. The requested software will have the decrypting program/module appended and the original software will be replaced with the encrypted software [pg 21 lines 27-30]. This appending is taken as providing the decrypting program in the footer of the transmission. It would have been obvious to one of ordinary skill at the time of the invention to have relied on and transmitted the unique GPS unitID taught by Behr et al to the base unit for encryption purposes so that the encrypted software can only be decrypted and used by the authorized device possessing the same GPS unitID key; likewise, it would have been obvious to one of ordinary skill at the time of the invention to have verified the presence of the proper unique key in the transmission footer so that decryption can only occur properly for the intended recipient device. Behr et al does not appear to specify example(s) where/how the unitID is stored with the device. Ahrens et al teaches a GPS system whereby users may pay for subscriptions entitling them to downloaded GPS map updates [abstract, col 19 lines 63+]. The user's GPS device is provided media *within* the GPS unit which stores the unitID; this unitID is used for security purposes to ensure updates can only be made to the appropriate device. It would have been obvious to one of ordinary skill at the time of the invention to have provided such hardware identification with that of Behr et al and Hornbuckle as an example of how to carry out the required hardware identification taught by Behr et al and Hornbuckle. Ahrens et al also points out that his transmitted GPS updating methods can also be used for other types of software, including PC

software and computer game software. This strengthens examiner's argument that one of ordinary skill would be motivated to use Hornbuckle's encryption techniques when transmitting software; secure transmission of software is critical, regardless of the software's ultimate functionality.

Regarding the "navigation data" language, the types of data in the "geographical databases" (described as route guidance, streets, airports, restaurants, points of interest, etc [col 1 lines 37-62]) of Behr et al can be taken to be aeronautical navigation data - one could navigate by relying on the data in Behr et al's "geographical databases"; Navigation can be accomplished by using maps of highways, rivers, buildings, etc.

It would have been obvious to one of ordinary skill at the time of the invention to have employed any well known encryption techniques, including CRC encryption using the unique unitID as a seed. Any encryption technique could have been used to secure the transmission and such selection of techniques is not critical to the invention.

Response to Arguments

Applicant argues that Hornbuckle's devicID (key) is not within the target device, but rather attached to module 18. First, examiner has relied upon Ahrens et al as a teaching of a GPS unit having an internally stored devicID which is used for security purposes to ensure updates can only be made to the appropriate device. Second, the base reference Behr et al teaches providing a GPS unitID and is silent to any external modules providing such a required feature. Third, even though Hornbuckle teaches a

module 18 having the deviceID (key), the target system of Hornbuckle can be taken to include the PC subsystem and the attached module system; the system includes a stored ID/key which is *within* the system. Further, the module 18 of Hornbuckle is a network communication interface (modem) which is known to be provided internally or externally with PCs. Further still, the network communication interface in Behr et al is internal to the GPS unit.

Applicant argues that it is not possible in Hornbuckle to send the key to the host from the client. This argument is not understood by the examiner, however examiner has supplied evidence supporting Official Notice. Further, the rejection proposes sending Behr et al's unitID as the encryption key to the software supplier host.

Applicant argues that the references do not provide "payment authorization information." As stated above, "payment authorization information" as broadly interpreted merely requires any type of information that is associated with authorization of payment. As such, requests for updated navigation information are taken to inherently include payment authorization information and/or permission for charging payments in that they at least identify a subscriber and are associated with billing functions.

Applicant argues that there is no suggestion to combine Behr et al and Hornbuckle because there is no need or desire in Behr et al for encryption/security. Applicant admits [spec pg 2] that GPS software providers typically provide software updates via mailed floppy disks rather than via the Internet to prevent easily unauthorized duplication of such Internet-distributed software. Applicant notes

problems with floppy disk distributions. Applicant also admits the known problem of an authorized update being easily applied to an unauthorized device. Behr et al also notes the problems with floppy disk distribution of software/map updates [col 2 lines 4-24]. Behr et al teaches that users are subscribers and are billed for services. One of ordinary skill would be motivated to protect against such known software pirating in the case of Behr et al's subscribing customers purchasing software services. Further, Hornbuckle also supplies reasoning to secure/encrypt software updates so that only paying, authorized users can use them.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Stallings et al ("Business Data Communications," 1994, Prentice Hall, second edition, pgs 601-602.) teaches encryption techniques.
- Bauer teaches sending encrypted signals which can only be decrypted by specific GPS units.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey D. Carlson whose telephone number is 703-308-3402. The examiner can normally be reached on Mon-Fri 8:30-6p, (off on alternate Fridays).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric Stamber can be reached on 703-305-8469. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9326.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.


Jeffrey D. Carlson
Primary Examiner
Art Unit 3622

jdc